First Season Bt Eggplant Hybrid Field Trials Completed in the Philippines

The multi-location confined field trials for Bt eggplant hybrids conducted in Sta. Maria, Pangasinan (Region I); University of the Philippines Los Baños (UPLB) (Region IV-A); Pili, Camarines Sur (Region V); and University of Southern Mindanao (USM), Kabacan, North Cotabato (Region XIII) were successfully concluded in July, 2012. The materials in the hybrid trials were four experimental Bt eggplant F1 hybrids, four isogenic non-Bt F1 hybrids and one commercial check variety. The field performance of the Bt eggplant hybrids were evaluated and compared with the non-Bt hybrid counterparts based on different agronomic-morphological traits and bioefficacy (based on shoot and fruit damage) against the eggplant fruit and shoot borer. In terms of biosafety, direct samplings were carried out to determine and compare the number and types of other associated arthropods present above-ground (secondary herbivores, predators, parasitoids, pollinators) and in the soil (mites, collombola) in Bt and non Bt eggplants. Field data were consolidated and currently undergoing statistical analyses.

The successful implementation of Bt eggplant field trials of UPLB were made possible by the strong cooperation between UPLB and partner collaborators from Region I Agriculture and Fishery Council, Central Bicol State University of Agriculture, University of Southern Mindanao, Institutional Biosafety Committees from the trial sites, and Post Entry Quarantine Offices of the Bureau of Plant Industry, as well as the full support from the local governments of Bay, Laguna; Sta. Maria, Pangasinan; Pili, Camarines Sur; and Kabacan, North Cotabato. (LD Taylo and MAM Abustan)
Biotechnology Expert Dialog Held in Indonesia

The Biotechnology Expert Dialog 2012 with the theme “Genetically Engineered Crop vs Food Security” was conducted on July 10, 2012 in Bogor, Indonesia with the aim of enhancing the knowledge and appreciation of biotechnology in the country. Two sessions were held during the dialog: 1) state of the art of genetically engineered crops utilization and 2) current research on genetically engineered crops in Indonesia.

Dr. Roger Beachy, director of Donald Danforth Plant Science Research Centre gave the keynote talk on the “Worldwide outlook of genetically engineered crop deployment and their significant contribution in world food security.” Dr. Bambang Purwantara, Director of the Indonesian Biotechnology Information Center (IndoBIC) and SEAMEO Southeast Asian Regional Center for Tropical Biology (BIOTROP) expounded on the rules and regulation of GM crop research in Indonesia. The current updates and status of genetically engineered sugarcane was discussed by Prof. Bambang Sugiharto of Jember University.

The dialog was attended by 179 participants composed of researchers, faculty, students, agricultural practitioners, and the private sector. It was organized by Bogor Agricultural University in partnership with CropLife Indonesia, IndoBIC, ABSPiI and US Department of Agriculture. (Dewi Suryani)

Farmers and Agri Workers Updated on Biotech Potato Breeding

Over the last few months, 136 farmers and agricultural workers in three areas in Indonesia (Mataram, Jambi, and Lembang) were briefed on potato breeding through biotechnological intervention. Drs. M. Herman, Edy Listanto, and Dinar Ambarwati of the Indonesian Center for Agricultural Biotechnology and Genetic Resources Research and Development (ICABIOGRAD) served as resource persons on biotechnology products and regulations in Indonesia as well as on biotechnology applications in potato trait improvement. Mr. Kusmana of the Indonesian Vegetables Research Institute (IVRI) also shared information on potato variety improvement through conventional breeding.

The heads of the three agricultural bureaus expressed their support and enthusiasm for the biotech potatoes because of its potential to increase crop yield as they are resistant to the devastating late blight disease.

The seminars were jointly organized by the Indonesian Biotechnology Information Center (IndoBIC) and ABSPiI, supported by SEAMEO Southeast Asian Regional Center for Tropical Biology (BIOTROP), Cornell University, and the International Service for the Acquisition of Agri-biotech Applications (ISAAA). (Dewi Suryani)

“Go Biotechnology for Our Green Future” Seminar

A seminar titled “Go Biotechnology for Our Green Future” was conducted by the Biology Faculty of Universitas Nasional (UNAS) in Indonesia, in collaboration with IndoBIC, ABSPiI, Monsanto, INACO and Unilever last November 26, 2011 in UNAS.

Dra. Retno Widowati, MSc of UNAS discussed current developments in biotechnology and benefits of other technologies, such as bioleaching (a process of using bacteria to dissolve metals instead of chemical solutions). Dra. Widowati said that bioleaching has been used to dissolve metals such as nickel, copper, zinc, cobalt, gold, lead, arsenic, and others. Other speakers were Dr. M. Herman of ICABIOGRAD who presented the development of genetically modified organisms, and Ir. Herry Kristanto of Monsanto Indonesia who talked about the positive impacts of genetically modified food in the world.

The seminar was attended by biology students of UNAS, academicians and private company. (Dewi Suryani)
Renowned S&T and environment advocate Congressman Angelo B. Palmones pushed for the continuation of the Bt eggplant multi-location field trial in the University of Southern Mindanao (USM), Kabacan, North Cotabato after seeing the experimental site and actual Bt eggplant fruits during a study visit there last June 29, 2012.

The policymaker said in his message during a seminar held after the study visit, that Bt eggplant can bring about significant benefits to the eggplant industry in the country. He said that once commercialized, Bt eggplant can be exported to countries that impose strict plant quarantine regulations with regard to the presence of chemical residues.

Congressman Palmones also stressed that Bt eggplant, which will require lesser chemical pesticides, promotes balance in the environment. He cited some local agricultural crop industries that were threatened because of the diminishing number of beneficial insects. Pushing for agri-biotechnology, Congressman Palmones also pointed out how the decade-old biotech corn propagation has made the local corn industry self-sufficient. (JA Panopio and SM Mercado)

Ms. Jenny A. Panopio, Special Projects Coordinator and Network Administrator of the Southeast Asian Regional Center for Graduate Study and Research and Agriculture - Biotechnology Information Center (SEARCA BIC) imparted the communication strategies for biotech outreach efforts, particularly on Bt eggplant, during the Scientific Forum on Biotechnology for Communicators last June 28, 2012 at the Grand Regal Hotel in Davao City, Philippines. Ms. Panopio highlighted the importance of getting information about biotech from the right sources (i.e. experts), and enumerated some of the communication challenges and misinformation on biotech and the parallel activities being done to address such problems. She also gave a brief introduction about the Bt eggplant technology and how it is being developed in the country. Education materials on biotechnology in general and Bt eggplant in particular, were also distributed during the event.

Attended by 59 journalists, communication practitioners, college students and faculty from Davao City, the forum also tackled relevant topics particularly that of the local scenario and developments in biotechnology. Congressman Angelo Palmones, a prominent S&T advocate, focused his keynote address on how biotechnology can help in solving important issues in the country such as food security, and how biotech research and development (R&D) needs more local support. Dr. Candida Adalla, Chair of the Department of Agriculture’s Biotechnology Program Office, gave a lecture on the local business opportunities from agri-biotech; she also clarified the government’s position on the issues raised on Bt eggplant (i.e. petition against its field trials in the Supreme Court, conflict with organic agriculture). Program Director for the Biotech for Life Media and Advocacy Resource Center Joel Paredes talked about the challenges of communicating biotechnology to the public.

The forum was organized by the Biotechnology Coalition of the Philippines, BMARC, and the Philippine Information Agency - Davao Region XI. (JA Panopio and SM Mercado)

The safety of Bt cry proteins and Bt crops has been extensively investigated and documented by highly credible scientists worldwide. Ten years since the commercialization of the first generation of Bt crops in 2003 in the Philippines, and globally since 1996, not a single case of adverse effects has been reported and scientifically verified. Nonetheless, for Bt eggplant, the Philippine regulatory body requires that compositional analysis be conducted as part of the comparative assessment for food safety.

Nutritional composition of fruit samples of Bt eggplant will be compared with non-Bt comparators from field trials in Pangasinan and University of the Philippines Los Baños, representing different environments. Comparison includes determination and analyses of single nutrients which represent components of important metabolic pathways in an organism, such as levels of proteins, fat, vitamins and minerals. In addition, important metabolites such as glycoalkaloids will also be determined. Compositional analyses will be done based on internationally agreed and recommended guidelines.

Currently, coded powdered fruit samples have been prepared, and these will be brought to an accredited and reputable third-party service laboratory for analyses. (APL Masanga and LD Taylo)
Mindanao Stakeholders Informed on the Science, Safety, and Benefits of Bt Eggplant

More than a hundred participants composed of farmers, technical agriculture and extension workers, local government officials, and other key stakeholders from the province of North Cotabato and other areas in Mindanao, Philippines were enlightened on the science, safety, and benefits of the fruit and shoot borer resistant Bt eggplant during two educational outreach activities conducted in its multi-location field trial in the University of Southern Mindanao (USM), Kabacan, North Cotabato.

A study visit to the field trial and a biotechnology seminar were both conducted on June 7 and 29, 2012 to clarify the concerns of stakeholders following an anti-GMO group’s filing of a petition to the Supreme Court against the field trials of Bt eggplant.

Dr. Lourdes Taylo, study leader of the Bt eggplant project in the University of the Philippines Los Baños-Institute of Plant Breeding (UPLB-IPB), and Mr. Mario Navasero, entomologist from the Crop Protection Cluster in UPLB, served as resource persons. Dr. Taylo gave a comprehensive discussion on the development, status, and potential benefits of Bt eggplant. Mr. Navasero imparted the methods in Integrated Pest Management in eggplant and the potential advantage of Bt eggplant in the IPM system.

On June 7, Dr. Jinky Leilani Lu from the National Institutes of Health in UP Manila shared results of her study on insecticide residues in eggplant farms in the province of Pangasinan. She also highlighted the hazards of chemical pesticides to both human health and environment. Dr. Emiliana Bernardo, member of the UPLB Institutional Biosafety Committee, and Ms. Thelma Soriano, Biotech Core Team Secretariat Head of the Department of Agriculture -Bureau of Plant Industry, joined the study visit and seminar in June 29 and talked about the safety of Bt technology and the Philippine national biosafety regulatory framework. USM President Jesus Antonio Derije reiterated the university’s mandate in carrying out biotech research and its strict compliance to the national biosafety policies and regulations.

The activities were organized by the ABSPII, the International Service for the Acquisition of Agricultural Biotech Applications (ISAAA), the Southeast Asian Regional Center for Graduate Study and Research in Agriculture-Biotechnology Information Center (SEARCA BIC), USM, UPLB-IPB, and the Asian Farmers Regional Network Philippines (ASFARNET Phils.). (JA Panopio and SM Mercado)

Support from Scientific Community... (from p.3)

right of the university to conduct such research. Chancellor Cruz also assured that UPLB is strictly complying with the national biosafety policies in carrying out the Bt eggplant research.

In a separate statement, Dr. Javier said that he hopes the Supreme Court will eventually “side with science” and not with the unfounded claims of the petitioners. Drs. Emiliana and Fernando Bernardo, an entomologist and a plant breeding and genetics expert, respectively, also expressed their views on the urgent need for Bt eggplant (because of the current harmful practice of excessive pesticide use in eggplant farms), the safety of Bt technology, and the stringency of the national biosafety regulatory framework.

During the 10th Anniversary Celebration of the Biotechnology Coalition of the Philippines last May 17-18, 2012, other members of the local scientific community also showed their support for Bt eggplant by signing affidavits explaining how Bt eggplant is safe for human consumption and the environment. Likewise, a policymaker, Congressman Angelo B. Palmones of AGHAM Partylist, also issued a statement saying that Bt eggplant, based on studies, is safe, and would be a very good alternative to pesticide spraying. (JA Panopio and SM Mercado)